

## ABSTRACT OF THE DISCLOSURE

**[0029]** A method and apparatus for performing intra-tool monitoring and control within a multi-step processing system. The method monitors the processing of a workpiece as the workpiece is processed by independently operating processing tools and produces control parameters for the various independently operating processing tools to optimize the processing of the workpiece. More specifically, the apparatus provides a metrology station located between each of a plurality of semiconductor wafer processing tools such that measurements can be made on wafers as they are passed from one tool to another providing intra tool monitoring. The data collected by the metrology station is coupled to a metrology data analyzer, which determines whether any of the plurality of wafer processing tools should be adjusted to improve the processing of the overall wafer. As such, the output of the metrology data analyzer provides control parameters to process controllers connected to each of the tools within the semiconductor wafer processing system. Consequently, the operation of the metrology stations and the metrology data analyzer provides both feed forward and feed back data to control the tools based upon certain information that is gathered within the metrology station.